SESLHD PROCEDURE COVER SHEET

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FUNCTIONAL GROUP(S)	Infection Control
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SUMMARY	Screening of at risk patients on admission and within extreme risk rated environments to reduce potential MRO transmission within the healthcare environment.

Multi Resistant Organism (MRO) screening within SESLHD facilities

SESLHDPR/776

1. POLICY STATEMENT

This procedure aims to improve identification of at risk patients who have unrecognised colonisation or potential for infection with a Multi-Resistant Organism (MRO) on admission to SESLHD facilities and within defined extreme risk rated units. Identification of patients with previously undiagnosed MROs facilitates appropriate isolation, implementation of transmission based precautions and guides medical decisions for empiric antibiotic treatment for patients.

Patient risk factors for acquiring an MRO include medical care or hospitalisation in overseas health care facilities in the past 12 months and/or admission to an Australian healthcare facility with reported evidence of MRO acquisition and transmission.

MRO screening may also be required in clinical areas where there may be a high risk of transmission or where the clinical impact of MRO transmission would be severe (such as dialysis units, haematology units, oncology units, neonatal intensive care units, intensive care units).

The rationale for these procedural recommendations is to reduce preventable MRO transmission risks within the healthcare environment.

2. BACKGROUND

Healthcare associated infections (HAIs) are one of the most common adverse events in care delivery impacting morbidity, mortality, quality of life and incurring increased burden for patients, families, and carers. Patients with an HAI are more likely to have a longer hospital stay, require second-line/broader-spectrum antimicrobials, more expensive antimicrobials, and place greater demands on the health system [1]

3. RESPONSIBILITIES

3.1 Employees will:

- Ensure a risk assessment is undertaken for patient hospitalisation(s) and healthcare received overseas in the previous 12 months prior to admission to a SESLHD facility
- Ensure patient infection risk alerts are reviewed for active isolation and precautions recommendations
- Perform MRO screening for at risk patients on admission, pre-operatively and prior to discharge from extreme risk areas as indicated
- Employees will consult with the Infection Prevention and Control Department for advice and recommendations for isolation and screening requirements.

3.2 Line Managers will:

- Ensure staff are aware of this procedure and participate in any suspected MRO transmission investigations or reviews

3.3 Medical staff will:

- Request and review MRO patient screening as indicated and seek advice from the Infectious Diseases Department for patient antibiotic treatment management options

4. DEFINITIONS

Carbapenemase Producing *Enterobacterales* (CPE): *Enterobacterales* are Gram-negative bacilli and are part of the normal gastrointestinal flora. Rarely, and mainly in people with underlying serious disease, they can cause serious and life threatening infection.
Carbapenemase producing *Enterobacterales* are resistant to carbapenem antibiotics and antibiotic treatment options for CPE are limited.

Vancomycin Resistant *Enterococci* (VRE): *Enterococcus faecalis* and *Enterococcus faecium* bacteria are part of the normal flora of the gastrointestinal and the female genital tract. *Enterococci* may develop resistance when repeatedly exposed to broad spectrum antibiotics. VRE may be associated with serious infection, particularly patients who are immunocompromised. VRE acquisition is usually healthcare-associated.

Methicillin resistant *Staphylococcus aureus* (MRSA): *Staphylococcus aureus* are common bacteria and at least 30% of the population carry *S aureus* on their skin or inside their nose generally causing no infection or illness. Some strains of *S aureus* are resistant to multiple antibiotics and are usually known as methicillin resistant *Staphylococcus aureus* or MRSA. MRSA can cause invasive infection and serious illness.

Candida Auris (*C.auris*): is an uncommon Candida species that has been isolated from skin, gastrointestinal, urogenital and respiratory tracts. *C. auris* can cause invasive fungal infections and frequently resistant to multiple antifungal agents used to treat Candida infections. Unlike other fungal pathogens, *C. auris* has been shown to be transmitted between patients and has been associated with a number of healthcare-associated outbreaks internationally.

Multi-resistant Organism (MRO): a bacterium that has resistance to two or more commonly used antibiotics from different classes (to which it would normally be expected to be susceptible).

Pooled swab: is a process that involves using a single swab to collect an MRO sample from multiple sites (e.g. using one swab to screen for MRSA by swabbing the nostril and groin).

5. PROCEDURE

5.1 MRO screening and risk assessment

The rationale of implementing a standardised MRO screening strategy within SESLHD is to reduce the potential for transmission within the healthcare facilities by:

- Identifying at risk patients (colonised and/or with active multi-drug resistant infections) that are admitted or transferred to SESLHD facilities
- Communicating isolation and precautions requirements for patients with MROs (or pending CPE and *Candida auris* testing) using the eMR alert system and concise documentation
- Ensuring that a consistent approach to isolation and implementation of additional precautions is maintained
- Ensuring environmental cleaning requirements for patient zones with confirmed or suspected MROs are compliant with NSW Health recommendations
- Providing guidance for use of empiric antibiotic therapy in high-risk patient populations
- Ensuring deisolation/clearance of patients is initiated when negative screening results are reviewed by Infection Prevention and Control practitioners
- Ensuring patients with existing MRSA can be deisolated if meeting the criteria as defined within SESLHDPR/770 - Methicillin-resistant *Staphylococcus aureus* - Alert removal.

Table 1: MRO screening requirements within SESLHD facilities

Patient Criteria	Screening required- use blue bacterial swab	Anatomical site collection	Frequency
The patient has been an inpatient or had treatment in an overseas healthcare facility or aged care facility in the last 12 months *	• *Candida auris* • CPE • VRE • MRSA	• Groin and axilla. Wound specimen/drain site if indicated. • Rectal swab or faeces (and wound if present). *Note that CPE and VRE can be tested with the one sample.* Wound specimen/drain site if indicated • Rectal swab or faeces *Note that CPE and VRE can be tested with the one sample.* Wound specimen/drain site if indicated • Adult patient: Nose and groin – pooled. • Neonatal patient: Nose, axilla, groin – pooled.	Once, on admission to facility

Patient Criteria	Screening required- use blue bacterial swab	Anatomical site collection	Frequency
		• Wound specimen/drain site if indicated.	** Patient requires isolation until cleared by IP&C*
The patient is having elective cardiac or orthopaedic joint replacement surgery	• MRSA • MSSA	• Nose and groin (pooled) (and wound if present)	Once, at preadmission clinic or at admission to hospital, which ever occurs first.
The patient is having emergency cardiac or orthopaedic joint replacement surgery	• MRSA • MSSA	• Nose and groin (pooled) (and wound if present)	Once, when identified patient will be requiring surgery.
The patient is admitted to an adult Intensive Care Unit (ICU)	• VRE • MRSA	• Rectal swab or faeces • Nose and groin - pooled (and wound if present)	On admission to unit, weekly and at discharge.
The patient is admitted to a Neonatal Intensive Care Unit (NICU)	• CPE • Serratia • MRSA	• Rectal swab or faeces • Nose and perianal (pooled) • Nose, axilla and groin (pooled)	On admission and discharge to another facility. Routine surveillance as indicated by department
The patient is admitted to an extreme risk rated area. i.e.: Haematology/Oncology etc * *Areas to be decided locally	• VRE • MRSA	• Rectal swab or faeces • Nose and groin - pooled (and wound if present)	On admission to unit and at discharge.
The patient presents with skin or soft tissue infection	• MRSA	• From lesion/wound/suspected site of infection • Nose and groin (pooled)	Once, when wound or suspected infection site identified

Within outbreaks and/or investigations of epidemiologically linked MRO cases, additional MRO screening and testing frequencies may be recommended by the Infection Prevention and Control Department, Infectious Diseases Specialist or Microbiologist as determined.

Where HAI CPE cases are confirmed by molecular analysis, these isolates will be referred for whole genome sequencing (WGS).

5.2 SITES FOR MRO SCREENING AND COLLECTION METHODS

5.2.1 MRSA Screening

- Two sites required
- Bilateral nose and groin swab are recommended. Bilateral axilla can also be utilised.
- Testing is pooled, one swab can be used for both sites
- Testing of any wounds (if present) is also recommended

1) Nose Swabs:

- Insert swab 2cm into nares
- Rotate swab against bilateral anterior nasal mucosa for at least 3 seconds

2) Groin swabs:

- Rotate swab on bilateral groin sites for at least 3 seconds

3) Axilla swabs:

- Rotate swab on bilateral axilla sites for at least 3 seconds

5.2.2 VRE Screening

- Rectal swab or faecal specimen is required
- Insert swab at least 2.5cm into the rectum or colostomy
- Rotate swab for at least 3 seconds and remove swab. If specimen is not visibly stained with faecal matter, then reinsert swab and repeat process. It is preferable to have visibly stained faecal matter, if not able to be achieved please still send to the lab with documentation explaining process.
- Testing of any wounds (if present) is also recommended

5.2.3 *Candida auris*

- Two sites required
- Axilla and groin swab are recommended with a pooled swab
- Rotate swab along area for at least 3 seconds
- Testing of any wounds (if present) is also recommended

5.2.4 Carbapenemase Producing *Enterobacterales* (CPE)

- Rectal swab or faecal specimen is required
- Insert swab at least 2.5cm into the rectum or colostomy
- Rotate swab for at least 3 seconds and remove swab. If specimen is not visibly stained with faecal matter, then reinsert swab and repeat process. It is preferable to have visibly stained faecal matter, if not able to be achieved please still send to the lab with documentation explaining process.
- Any wounds are also recommended

5.3 SPECIALITY AREAS

5.3.1 Critical Care Areas

- Routine MRSA and VRE screening is required for all patients within extreme risk critical care areas
- MRSA (nose and groin) and VRE (rectal) swabs must be collected on admission,
- discharge and weekly.
- Do not re-screen patients for the same MRO who already have a confirmed MRO
- Do not recollect specimens within 24 hours of another specimen
- Additional MRO screening may be required in the event of an outbreak or at the discretion of Infection Prevention and Control (IPC) or the Infectious Diseases consultant.

5.3.2 Orthopaedics and Cardiothoracic surgery

- All patients admitted for elective orthopaedic joint/implant and open heart cardiothoracic surgery will be screened during pre-admission assessment. This is to guide the choice of operative prophylaxis and whether to commence any load reduction strategy prior to surgery
- Screening immediately pre-operatively or at any time post-operatively is not recommended unless the patient meets any of the criteria listed in Table 1
- Non-elective or emergency orthopaedic joint/implant and open heart cardiothoracic surgical cases should be screened prior to surgery and load reduction commenced if indicated.

5.3.3 Other inpatient locations

- Patients do not need to be routinely screened prior to intra or inter hospital transfers however if an inpatient area is reported with high MRO prevalence or outbreak with epidemiologically linked cases, screening may be recommended

5.4 SCREENING PRIOR TO DISCHARGE TO A PRIVATE FACILITY

- If requested by a private facility, patients may be screened for MRSA or other MROs based on local prevalence upon discharge to the facility
- This screening should be initiated as soon as practical once the request is made

5.5 CLEARANCE SCREENING

5.5.1 Evidence for Clearance Screening

With the exception of MRSA, evidence for the clearance of MROs is limited and is currently not recommended within SESLHD. Consideration for the clearance of MROs must be discussed with the Infectious Diseases and Infection Prevention and Control.

5.5.2 Methicillin-resistant Staphylococcus aureus alert removal

For the clearance of MRSA staff must follow SESLHDPR/770 - Methicillin-resistant *Staphylococcus aureus* - Alert removal.

5.6 MRSA DECOLONISATION

For decolonisation of MRSA please refer to SESLHDPR/681 - Staphylococcus aureus (MSSA and MRSA) decolonisation procedure.

6. DOCUMENTATION

- eMR documentation of risk assessment for patients requiring MRO screening
- eMR and iPM alerts of patients with confirmed MROs or pending results (CPE and Candida auris)
- eMR documentation for the clearance of MRSA

7. AUDIT

- Completion rates of admission and discharge MRO screening
- Completion rates of pre-operative MRO screening
- Commencement of load reduction for pre-operative patients with identified risks

8. REFERENCES

1. NSW Health Policy Directive PD2023_025 - Infection Prevention and Control in Healthcare Settings
2. CEC Infection Prevention and Control Practice Handbook
3. Australian Guidelines for the Prevention and Control of Infection in Healthcare
4. NSW Health Guideline GL2019_012 - Surveillance & Response for Carbapenemase-Producing Enterobacterales (CPE) in NSW Health Facilities
5. SESLHDGL/066 - Reducing Cardiothoracic Surgical Site Infections through use of a Cardiothoracic Surgical Site Infection Care Bundle Guideline

9. VERSION AND APPROVAL HISTORY

Date	Version	Version and approval notes
14 October 2024	1.0	New document developed by SESLHD Infection Prevention & Control Committee and sub-committee. Approved by SESLHD Patient Safety and Quality Committee.